In the claims

Please amend the claims as follows:

1. (presently amended) An isolated nucleic acid molecule, comprising a nucleic acid sequence comprising at least 50 nucleotides of a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, ~~a) of the nucleic acid sequence of one of Figs. 21A, B,~~ ~~b) of an allele~~ alleles of ~~the nucleic acid sequence of one of Figs. 21A, B, or~~ ~~c) of~~ a SEQ ID NO:1 or 2, and nucleic acid ~~sequence~~ sequences which under stringent conditions ~~hybridizes~~ hybridize with ~~the nucleic acid sequence of one of Figs. 21A, B~~ SEQ ID NO:1 or 2.

2. (presently amended) The nucleic acid molecule according to claim 1, wherein said nucleic acid sequence comprises at least 50 nucleotides of a sequence selected from the group consisting of SEQ ID NOS: 3, 5, 7, 9, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, and 36 ~~a) of the nucleic acid sequence of one of Figs. 22A - Q,~~ ~~b) of a~~ nucleic acid ~~sequence,~~ sequences which ~~corresponds~~ correspond to ~~the~~ these nucleic acid ~~sequence of one of Figs. 22A - Q~~ sequences within the degeneration of the genetic code, ~~or~~

~~c) of a~~ and nucleic acid ~~sequence~~ sequences which under stringent conditions ~~hybridizes~~ hybridize with ~~the nucleic acid sequence of one of Figs. 22A – Q~~ these sequences.

3. (presently amended) The nucleic acid molecule according to claim 2, wherein said nucleic acid sequence comprises

~~a) the nucleic acid sequence of one of Figs. 22A – Q,~~

~~b) a nucleic acid sequence, which corresponds to the nucleic acid sequence of one of Figs. 22A – Q within the degeneration of the genetic code, or~~

~~c) of a nucleic acid sequence which under stringent conditions hybridizes with the nucleic acid sequence of one of Figs. 22A – Q~~ the entire sequence

4. (presently amended) The nucleic acid molecule according ~~to any one of the claims~~ 1 ~~to 3,~~ wherein at least one coding region is functionally deleted.

5. (presently amended) The nucleic acid molecule according to ~~any one of the claims~~ claim 1 ~~to 4~~, having inserted therein at least one insertion cassette for transposon or phage mediated insertion.

6. (presently amended) The nucleic acid molecule according to ~~any one of the claims~~ claim 1 ~~to 5~~, ~~wherein~~ further comprising at least one heterologous nucleic acid molecule coding for a polypeptide or peptide is inserted or deletion-inserted.

7. (presently amended) The nucleic acid molecule according to claim ~~7, wherein~~ further comprising the sequences flanking said heterologous nucleic acid molecule each ~~have~~ having a length of at least 50 nucleotides, preferred 200 - 250 nucleotides.

8. (presently amended) The nucleic acid molecule according to claim 6 or 7, wherein said heterologous nucleic acid molecule comprises a nucleic acid sequence coding for a bacterial or viral antigen or homologue thereof.

9. (presently amended) The nucleic acid molecule according to claim 6 ~~or 7~~, wherein said heterologous nucleic acid molecule comprises a nucleic acid sequence coding for a tumor antigen.

10. (presently amended) The nucleic acid molecule according to ~~any one of the claims~~ claim 7 ~~to 9~~, wherein said heterologous nucleic acid molecule comprises at least one gene expression cassette.

11. (presently amended) The nucleic acid molecule according to ~~any one of the claims~~ claim 7 ~~to 10~~, wherein said heterologous nucleic acid molecule comprises at least one transactivator cassette, selective marker cassette, invertase cassette or combination thereof.

12. (presently amended) The nucleic acid molecule according to ~~any one of the claims~~ claim 7 ~~to 11~~, wherein said heterologous nucleic acid molecule comprises at least one nucleic acid sequence coding for a polypeptide or peptide targeting and/or immunostimulatory domain.

13. (presently amended) A recombinant vector comprising the nucleic acid molecule according to ~~any one of the claims~~ claim 1 ~~to 12~~.

14. (presently amended) A cell comprising the nucleic acid molecule according to ~~any one of the claims~~ claim 5 ~~to 12 or the recombinant vector according to claim 13~~.

15. The cell according to claim 14, wherein the cell is a gram-negative cell.

16. The cell according to claim 14, wherein the cell is a Salmonella cell.

17. (presently amended) A peptide or polypeptide comprising a peptide sequence comprising at least 20 amino acids of a sequence selected from the group consisting of SEQ ID NOS: 3, 5, 7, 9, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, and 36,

~~a) of the sequence of Figs. 23A - Q, or~~

~~b) of a sequence~~ sequences which ~~is~~ are 60 % homologous to ~~the sequence of Figs. 23A - Q~~ these sequences.

18. (presently amended) ~~A~~ The polypeptide ~~comprising the sequence~~

~~a) of Figs. 23A - Q, or~~

~~b) which is 60 % homologous to the sequence of Figs. 23A-Q~~ of claim 17 comprising the entire sequence.

19. (presently amended) An antibody directed against the polypeptide according to ~~any one of the claims~~ claim 17 ~~and 18~~.

20. (presently amended) A fusion protein comprising the polypeptide according to ~~any one of the claims~~ claim 17 ~~and 18~~ having inserted or deletion-inserted or being fused C- or NH_2-terminally with at least one heterologous polypeptide.

21. (presently amended) The fusion protein according to claim 20, wherein the heterologous polypeptide is selected from the group consisting of bacterial, viral ~~or~~ and tumor antigens.

22. An attenuated gram-negative cell comprising the SPI2 gene locus, wherein at least one gene of the SPI2 locus is inactivated, wherein said inactivation results in an attenuation/reduction of virulence compared to the wild type of said cell.

23. (presently amended) The attenuated gram-negative cell according to claim 22, wherein at least one inactivated gene is selected from the group consisting of effector (sse) genes, secretion apparatus (ssa) genes, chaperon (ssc) genes and regulation (ssr) genes.

24. (presently amended) The attenuated gram-negative cell according to ~~claims~~ claim 22 ~~and 23~~, wherein said cell is an Enterobactericae cell~~, in particular, a Salmonella cell, a Shigella cell or a Vibrio cell~~.

25. (presently amended) The attenuated gram-negative cell according to claim 24, wherein said cell is selected from the group consisting of a Salmonella cell, a Shigella cell and a Vibrio cell.

26. (presently amended) The attenuated gram-negative cell according to claim 24 ~~or 25~~, wherein said cell has a broad host range.

27. The attenuated gram-negative cell according to claim 26, wherein said cell is a Salmonella serotype Typhimurium Definitive Type 104 (DT104) cell.

28. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~27~~, wherein at least one inactivated gene is selected from the group consisting of sse, ssc and ssr.

29. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~28~~, wherein at least one inactivated gene comprises at least one sse gene.

30. (presently amended) The cell according to claim 29, wherein at least one sse gene is selected from the group consisting of sseC, sseD and sseE.

31. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~30~~, wherein at least one inactivated gene comprises at least one ssr gene.

32. (presently amended) The cell according to claim 31, wherein said at least one ssr gene is ssrB.

33. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~32~~, wherein at least one inactivated gene comprises at least one ssc gene.

34. The cell according to claim 33, wherein said at least one ssc gene is sscB.

35. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~34~~, wherein at least one gene is inactivated by a mutation comprising a deletion.

36. The cell according to claim 35, wherein said deletion comprises at least 6 nucleotides.

37. (presently amended) The cell according to ~~any one of the claims~~ claim 35 ~~and 36~~, wherein the mutation comprises a deletion of the complete coding sequence for said gene.

38. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to 37~~, wherein at least one gene is inactivated by a mutation comprising the insertion of a heterologous nucleic acid molecule.

39. (presently amended) The cell according to ~~any one of the claims~~ claim 35 ~~to 38~~, wherein said mutation is a non-polar mutation.

40. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to 39~~, wherein at least one additional gene located outside of the SPI2 locus is inactivated, wherein the inactivation results in a further attenuation/reduction of virulence compared to the wild type.

41. The cell according to claim 40, wherein said additional gene comprises an aro gene.

42. The cell according to claim 41, wherein said aro gene is aro A.

43. The cell according to claim 40, wherein said additional gene is superoxide dismutase.

44. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to 43~~, comprising at least one selective marker cassette.

45. The cell according to claim 44, wherein said selective marker cassette is capable of conferring an antibiotic resistance to the cell.

46. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~45~~ comprising at least one gene expression cassette.

47. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~46~~ comprising at least one transactivator cassette.

48. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~47~~ comprising at least one invertase cassette.

49. (presently amended) The cell according to ~~any one of the claims~~ claim 22 ~~to~~ ~~48~~ further comprising at least one insertion cassette.

50. (presently amended) A carrier for the presentation of an antigen to a host, which carrier is an attenuated gram-negative cell according to ~~any one of the claims~~ claim 22 ~~to 49~~, wherein said cell comprises at least one heterologous nucleic acid molecule comprising a nucleic acid sequence coding for said antigen, wherein said cell is capable of expressing said nucleic acid molecule or capable of causing the expression of said nucleic acid molecule in a target cell.

51. The carrier according to claim 50, wherein said nucleic acid molecule comprises a nucleic acid sequence coding for a bacterial or viral antigen or a tumor antigen.

52. (presently amended) The carrier according to claim 51, wherein said nucleic acid sequence codes for an antigen from an organism selected from the group consisting of

Helicobacter pylori, Chlamydia pneumoniae, Borrelia burgdorferi, Nanobacteria, Hepatitis virus, human papilloma virus ~~or~~ and Herpes virus.

53. (presently amended) The carrier according to ~~any of the claims~~ claim 50 ~~to 52~~, wherein said nucleic acid molecule is inserted into the SPI2 locus.

54. The carrier according to claim 53, wherein said nucleic acid molecule is inserted into an sse gene.

55. The carrier according to claim 54, wherein said sse gene is selected from sseC, sseD and sseE.

56. (presently amended) The carrier according to ~~any one of the claims~~ claim 50 ~~to 55~~, wherein said insertion is a non-polar insertion.

57. (presently amended) The carrier according to ~~any one of the claims~~ claim 50 ~~to 56,~~ wherein the expression of said heterologous nucleic acid molecule is tissue specific.

58. (presently amended) The carrier according to ~~any one of the claims~~ claim 50 ~~to 57~~, wherein the expression of said heterologous nucleic acid is inducible.

59. (presently amended) The carrier according to ~~any one of the claims~~ claim 50 ~~to 58~~, wherein the expression of said heterologous nucleic acid is activated in a target cell.

60. The carrier according to claim 59, wherein said target cell is a macrophage.

61. (presently amended) The carrier according to ~~any of the claims~~ claim 50 ~~to 60~~, wherein said nucleic acid molecule comprises a nucleic acid sequence coding for a least one polypeptide or peptide targeting and/or immunostimulatory domain.

62. (presently amended) The carrier according to ~~any one of the claims~~ claim 50 ~~to 60~~, wherein said nucleic acid molecule codes for a fusion protein.

63. (presently amended) The cell according to ~~any one of the claims~~ claim 50 ~~to 62~~, wherein the expression product of said nucleic acid molecule remains in the cytosole of said carrier.

64. (presently amended) The carrier according to ~~any one of the claims~~ claim 50 ~~to 62~~, wherein the expression product of said nucleic acid molecule is directed to the periplasmatic space of said carrier.

65. (presently amended) The carrier according to ~~any one of the claims~~ claim 50 ~~to 62~~, wherein the expression product of said nucleic acid molecule is directed to the outer membrane of said carrier.

66. (presently amended) The carrier according to ~~any one of the claims~~ claim 50 ~~to 62~~, wherein the expression product of said nucleic acid molecule is secreted.

67. The carrier according to claim 66, wherein the expression product of said nucleic acid molecule is secreted by the type III secretion system.

68. The carrier according to claim 67, wherein the expression product of said nucleic acid molecule is secreted by the SPI2 type III secretion system.

69. An attenuated gram-negative cell comprising the SPI2 gene locus, characterized by a lack of at least one SPI2 polypeptide, wherein said lack results in an attenuation/reduction of virulence compared to the wild type of said cell.

70. (presently amended) The attenuated gram-negative cell according to claim 69, wherein said missing polypeptide is selected from the group consisting of effector (sse) polypeptides, secretion apparatus (ssa) polypeptides, chaperon (ssc) polypeptides 68 and regulatory (ssr) polypeptides.

71. (presently amended) A carrier for the presentation of an antigen to a host, which carrier is an attenuated gram-negative cell according to ~~claims~~ claim 69 ~~or 70~~, further characterized by the presence of at least one heterologous peptide or polypeptide having immunogenic properties.

72. (presently amended) A pharmaceutical composition, comprising as an active agent an immunologically protective living vaccine, which is an attenuated cell ~~according to any one of the claims 22 to 49, 69 and 70~~ selected from the group consisting of an attenuated gram-negative cell comprising the SPI2 gene locus, wherein at least one gene of the SPI2 locus is inactivated, wherein said inactivation results in an attenuation/reduction of virulence compared to the wild type of said cell, and an attenuated gram-negative cell comprising the SPI2 gene locus, characterized by a lack of at least one SPI2 polypeptide, wherein said lack results in an

attenuation/reduction of virulence compared to the wild type of said cell, or a carrier ~~according to any one of the claims 50 to 68 and 71~~ thereof.

73. The composition according to claim 72 together with pharmaceutically acceptable diluents, carriers and/or adjuvants.

74. (presently amended) The composition according to ~~any one of the claims~~ claim 72 ~~and 73~~, which is suitable for administration to a mucosal surface or via the parenteral route.

75. (presently amended) A method for the preparation of a living vaccine, comprising providing a living gram-negative cell comprising the SPI2 locus and inactivating at least one gene of the SPI2 locus to obtain an attenuated gram-negative cell ~~according to any one of the claims 22 to 49, 69 and 70~~ selected from the group consisting of an attenuated gram-negative cell comprising the SPI2 gene locus, wherein at least one gene of the SPI2 locus is inactivated, wherein said inactivation results in an attenuation/reduction of virulence compared to the wild type of said cell, and an attenuated gram-negative cell comprising the SPI2 gene locus, characterized by a lack of at least one SPI2 polypeptide, wherein said lack results in an attenuation/reduction of virulence compared to the wild type of said cell.

76. (presently amended) The method of claim 75, further comprising inserting at least one heterologous nucleic acid molecule coding for an antigen to obtain a carrier according to ~~any one of the claims~~ claim 50 ~~to 68 and 71~~.

77. (presently amended) A method for the preparation of a living vaccine composition comprising formulating an attenuated cell ~~according to any one of the claims 22 to 49, 69 and 70~~ selected from the group consisting of an attenuated gram-negative cell comprising the SPI2 gene locus, wherein at least one gene of the SPI2 locus is inactivated, wherein said inactivation results in an attenuation/reduction of virulence compared to the wild type of said cell, and an attenuated gram-negative cell comprising the SPI2 gene locus, characterized by a lack of at least one SPI2 polypeptide, wherein said lack results in an attenuation/reduction of virulence compared to the wild type of said cell, or a carrier a~~ccording to any one of the claims 50 to 68 and 71~~ thereof in a pharmaceutically effective amount together with pharmaceutically acceptable diluents, carriers and/or adjuvants.

78. (presently amended) A method for the detection of an attenuated cell ~~according to any one of the claims 22 to 49, 69 and 70~~ selected from the group consisting of an attenuated gram-negative cell comprising the SPI2 gene locus, wherein at least one gene of the SPI2 locus is inactivated, wherein said inactivation results in an attenuation/reduction of virulence compared to the wild type of said cell, and an attenuated gram-negative cell comprising the SPI2 gene locus, characterized by a lack of at least one SPI2 polypeptide, wherein said lack results in an attenuation/reduction of virulence compared to the wild type of said cell,or a carrier ~~according to any one of the claims 50 to 68 and 71~~ thereof, comprising providing a sample containing said cell and detecting a specific property not present in wild type.

79. (presently amended) A method for establishing a library of attenuated gram-negative cells comprising obtaining at least two attenuated gram-negative cells ~~according to any one of the claims 22 to 49, 69 and 70~~ selected from the group consisting of an attenuated gram-negative cell comprising the SPI2 gene locus, wherein at least one gene of the SPI2 locus is inactivated, wherein said inactivation results in an attenuation/reduction of virulence compared to the wild type of said cell, and an attenuated gram-negative cell comprising the SPI2 gene locus, characterized by a lack of at least one SPI2 polypeptide, wherein said lack results in an attenuation/reduction of virulence compared to the wild type of said cell or a carrier thereof, determining the pathogenicities of said cells, and determining the relation of the pathogenicities of said cells.

80. The method according to claim 79 further comprising determining the immunogenicities of said cells and determining the relation of the immunogenicities of said cells.

81. The method of claim 80, wherein the determination of the immunogenicity is a determination of the humoral, cellular and/or mucosal immunogenicity.

82. (presently amended) A method for establishing a library of attenuated carriers for the presentation of an antigen to a host, comprising obtaining at least two carriers according to ~~any one the claims~~ claim 50 ~~to 68 and 71~~, determining (a) the pathogenicities of said cells and the relation of the pathogenicities of said cells, and (b) determining the effect of said antigen presentation in said host and determining the relation of said effects caused by said cells.

83. The method of claim 82, wherein the effect of antigen presentation is determined at humoral, cellular and/or mucosal level.

84. (presently amended) The method according to claim 82 ~~or 83~~ further comprising determining the immunogenicities of said cells and determining the relation of the immunogenicities of said cells, wherein said determination optionally is a determination of the humoral, cellular and/or mucosal immunogenicity.

85. (cancelled) The use of an attenuated cell according to any one of the claims 22 to 49, 69 and 70 or a carrier according to any one of the claims 50 to 68 and 71 for the preparation of a drug for the preventive or therapeutic treatment of an acute or chronic disease caused essentially by a bacterium or virus.

86. (cancelled) The use according to claim 85, wherein said disease is caused essentially by a Salmonella cell.

87. (cancelled) The use of a carrier according to any one of the claims 50 to 68 and 71 for the preparation of a drug for the preventive or therapeutic treatment of a tumour.

88. (cancelled) The use of a nucleic acid molecule according to any one of the claims 1 to 12 or a vector according to claim 13 for the preparation of an attenuated cell, a living vaccine or a carrier for the presentation of an antigen to a host.

89. (cancelled) Use of the Salmonella SPI2 locus for the preparation of an attenuated cell, a living vaccine or a carrier for the presentation of an antigen to a host.

90. (cancelled) Use of a virulence gene locus of a gram-negative cell for the preparation of a carrier for the presentation of an antigen to a host.

91. (presently amended) An isolated nucleic acid molecule comprising a nucleic acid of at least 100 nucleotides of a sequence selected from the group consisting of SEQ ID NOS: 3, 5, 7, 9, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, and 36

~~a) of the nucleic acid sequence of one of Figs.24A, B~~

~~b) of a~~ nucleic acid ~~sequence~~ sequences which under stringent conditions ~~hybridizes~~ with ~~the nucleic acid sequence of one of Figs.24A, B~~ these sequences.

92. The nucleic acid molecule according to claim 91, wherein said nucleic acid molecule is capable of inducing the expression of a nucleic acid sequence coding for a peptide or polypeptide operatively linked to said nucleic acid molecule.

93. (presently amended) Expression system for the ~~in-vivo~~ *in vivo* inducible expression of a heterologous nucleic acid in a target cell, comprising a carrier cell for said heterologous nucleic acid, wherein said carrier cell comprises (a) a polypeptide having the amino acid sequence shown in ~~Figure 23P~~ SEQ ID NO:35 (ssrA) or a functional homologue thereof, (b) a polypeptide having the amino acid sequence shown in ~~Figure 23Q~~ SEQ ID NO:37 (ssrB) or a functional homologue thereof, and (c) the nucleic acid molecule according to claim 92.

94. Expression system according to claim 91, wherein said target cell is a macrophage.

95. (presently amended) Expression system according to ~~claims~~ claim 93 ~~and 94~~, wherein said carrier cell is a Salmonella cell.

96. (presently amended) The expression system according to ~~any of the claims~~ claim 93 ~~to 95~~, wherein said target cell comprises a gene expression cassette.

97. (presently amended) The expression system according to ~~any of the claims~~ claim 93 ~~to 96~~, wherein said target cell comprises an insertion cassette.

98. (presently amended) The expression system according to ~~any of the claims~~ claim 93 ~~to 97~~, wherein said target cell comprises a heterologous nucleic acid molecule coding for a peptide or polypeptide.

99. (cancelled) Use of the nucleic acid molecule according to claim 92 for the in vivo inducible expression of a heterologous nucleic acid molecule.

100. (cancelled) Use of the nucleic acid molecule according to claim 92 for the detection of in vivo inducible promoters.